

Epitomes

Important Advances in Clinical Medicine

General and Family Practice

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The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in general and family practice. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on General and Family Practice of the California Medical Association, and the summaries were prepared under the direction of Drs Cotterel and Rai and the panel.

Screening Children for Lead Poisoning

LEAD FROM INDUSTRIAL SOURCES, home remodeling, imported ceramics, and tap water has raised serum lead levels above 480 μmol per liter (10 mg per dl) in as many as 4 million preschool children in the United States.

Although lead poisoning effects may be asymptomatic, lead toxicity causes confusion, anorexia, anemia, and neuropathies. Severe lead poisoning leads to renal tubular necrosis, lead encephalopathy, and even death. Detection and early treatment notably reduce morbidity and mortality. Serum lead levels from regional reference laboratories cost \$20 to \$30 and are reliable with a maximum of 7% variation. Children, especially those 6 months to 6 years old, are at the highest risk for lead poisoning. Children absorb 40% to 50% of the lead they ingest, whereas adults absorb less than 25%.

Acceptable methods of treating lead poisoning are available. For serum lead levels of 480 to 1,210 μmol per liter (10 to 25 mg per dl), treatment requires identifying the lead source and removing it from the environment. Prescribing chelating agents for patients with lead levels under 1,880 μmol per liter (39 mg per dl) is controversial. In rare cases, patients with lead levels above 1,930 μmol per liter (40 mg per dl) merit chelation therapy or dialysis. Succimer, the recently approved oral form of British antilewisite, makes the outpatient treatment of moderate lead poisoning possible. Patients should take succimer, 10 mg per kg three times a day for 5 days, followed by 10 mg per kg twice a day for 14 days. The serum lead rebound level should be monitored at day 20. The cost of 19 days of succimer therapy is \$150 to \$200. Succimer's rare side effects include dyspepsia in less than 5% of patients and mildly elevated aminotransferase levels in less than 10%.

Acute lead poisoning dictates a cleansing of the gastrointestinal tract. Further therapy is based on the serum lead level and the patient's clinical state. In cases of long-

term lead exposure, osteoblasts incorporate lead into the bone matrix. Lead mobilization tests to remove lead from bony stores are not standard care. Using x-ray fluorescence to determine long-term lead exposure is not standard practice but holds promise for the future.

The best method for screening children, mandatory or not, is asking whether a child spends much time in a structure built before 1950 where paint is peeling or renovation is in progress or whether the child's home is located near an industrial facility using lead. Exposure history is also important if a family member has had lead poisoning or a job or hobby that involves lead or lead dust. This simple method is painless and can help determine if serum testing is indicated.

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REFERENCES

- Jorgensen FM: Succimer—The first approved oral lead chelator. *Am Fam Physician* 1993; 48:1496-1502
Landrigan PJ, Todd AC: Lead poisoning. *West J Med* 1994; 161:153-159

Antioxidant Supplements and Cancer Prevention

CONSIDERABLE PATIENT INTEREST has been sparked by recent lay-press coverage of ongoing clinical trials studying the role of antioxidant supplements in the prevention of cancer and coronary artery disease. Patients frequently ask whether supplementing their diets with antioxidants is advisable. An understanding of completed and ongoing clinical research trials is helpful when addressing patient inquiries and making recommendations regarding the use of supplements.

Ample cohort and case-control epidemiologic studies have consistently yielded evidence that diets high in fruits and vegetables are associated with a low incidence of cancer. Food sources with high concentrations of antioxidant micronutrients, such as selenium, beta-carotene, vi-